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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/611,403	07/06/2000	Paul F. Ringseth	3382-56062	6514

7590 10/20/2005

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EXAMINER	
WOOD, WILLIAM H	

ART UNIT	PAPER NUMBER
2193	

DATE MAILED: 10/20/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/611,403	RINGSETH ET AL.	
	Examiner	Art Unit	
	William H. Wood	2193	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *29 June 2005*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1 and 4-42* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1 and 4-42* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claims 1 and 4-42 are pending and have been examined.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

2. Claim 21 is rejected under 35 U.S.C. 102(a) as being anticipated by Richard Grimes, "Attribute Programming with Visual C++".

In regard to claim 21, Grimes disclosed the limitations:

- *In a computer system, a method of embedding debugging information in a definition language output file to facilitate debugging of an input file* (page 2, third paragraph under section "How is Attribute Programming Managed in Visual C++"), *the input file comprising constructs of definition language information embedded in programming language code* (pages 4-5, code block), *the method comprising:*
  - *receiving by a programming language compiler an input file, the input file comprising constructs of definition language information embedded in programming language code* (pages 4-5, code block);

- *embedding by the programming language compiler debugging information in a definition language output file* (page 3, second and third paragraph under figure, note .obj file including attribute information used in debugging as stated directly above), *the definition language output file for subsequent processing by a definition language compiler* (page 3, second and third paragraph under figure; page 2, third paragraph under section "How is Attribute Programming Managed in Visual C++"; MIDL), *whereby the embedded debugging information associates errors raised by the definition language compiler with locations of embedded definition language constructs in the input file to facilitate debugging of the input file* (page 3, second paragraph under figure).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4 Claims 1-20, 22-42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Richard Grimes, "Attribute Programming with Visual C++" in view of Aho et al., "Compilers Principles, Techniques, and Tools" herein referred to as Grimes and Aho respectively. Additional presented limitations and claims found in the Grimes and Aho combination as currently understood. Further analysis would require a proper response

to the Requirement for Information of the last Office Action dated 26 January 2005. As such, the rejections are maintained.

In regard to claim 1, Grimes disclosed the limitations:

- *A computer readable medium having stored thereon a computer executable compiler system* (page 2, first paragraph of section "How is Attribute Programming Managed in Visual C++"; page 3, second paragraph under figure; compiler system) *that performs semantic analysis of definition language information* (page 3, second paragraph under figure) *embedded in programming language code in a file* (page 2, first paragraph of section "How is Attribute Programming Managed in Visual C++", "interface" keyword; page 4-5, code block shows C++ and definition language code combined, notice "module" word), *the compiler system comprising:*
  - *a file including programming language code having embedded therein definition language information* (page 2, first paragraph of section "How is Attribute Programming Managed in Visual C++", "interface" keyword; page 4-5, code block shows C++ and definition language code combined, notice "module" word);
  - *output ... based at least in part upon semantics of the embedded definition language information* (page 3, second paragraph under figure).

Grimes did not explicitly state the limitations *a front end module that separates a file into plural tokens; a converter module that converts the plural tokens into an intermediate*

representation; and a back end module that produces output code from the intermediate is representation. Aho demonstrated that it was known at the time of invention to develop compilers with a front end, a converter module and a back end (page 20, section "Front and Back Ends"). It would have been obvious to one of ordinary skill in the art at the time of invention to implement Grimes' system of C++ code and definition code with a compiler, which would generate executable code as found in Aho's teaching. This implementation would have been obvious because one of ordinary skill in the art would be motivated to provide a mechanism, which would allow source code to produce meaningful executable code.

In regard to claim 2, Grimes and Aho further disclosed the limitation *wherein the intermediate representation includes a symbol table and a parse tree that unifies representation of the programming language code and the embedded definition language information* (Aho: pages 11 and 40-48).

In regard to claim 3, Grimes and Aho further disclosed the limitation *wherein the symbol table includes plural entries for symbol names for the programming language code, and wherein at least one of the plural entries has an associated list of definition language attributes* (Aho: page 11).

In regard to claim 4, Grimes and Aho further disclosed the limitation *further comprising a definition language attribute provider that modifies the intermediate representation*

based upon the semantics of the embedded definition language information (Grimes: pages 2-3, paragraph spanning pages; page 3, figure shown).

In regard to claim 5, Grimes and Aho further disclosed the limitation *further comprising an error checker module that checks for lexical, syntactic, and semantic errors in the file* (Aho: page 11).

In regard to claim 6, Grimes disclosed the limitations:

- *In a computer system, a computer executable compiler system that creates a unified programming language ... from a file comprising a mix of programming language constructs and interface definition language constructs* (page 2-5), *the compiler system comprising:*
  - *a file comprising a mix of programming language constructs and interface definition language constructs* (page 4-5, code block);

Grimes did not explicitly state the limitations *interface definition language parse tree; a front end module that separates a file into plural tokens; and a converter module that converts the plural tokens into an intermediate representation comprising a symbol table and a parse tree, wherein the symbol table includes plural entries for symbol names for the programming language constructs, at least one of the plural entries having an associated list of interface definition language attributes, and wherein the parse tree unifies representation of the programming language constructs and the interface definition language constructs.* Aho demonstrated that it was known at the time of

invention to develop compilers with a front end, a converter module, a back end, a symbol table, and a parse tree (page 1-24 and 40-48). It would have been obvious to one of ordinary skill in the art at the time of invention to implement Grimes' system of C++ code and definition code with a compiler, which would generate executable code as found in Aho's teaching. This implementation would have been obvious because one of ordinary skill in the art would be motivated to provide a mechanism, which would allow source code to produce meaningful executable code. Finally, upon the above combination, it can be seen that symbol tables (provide by Aho), would have entries that contain a list of attributes associated with interface definition language (provided by Grimes).

In regard to claim 7, Grimes and Aho disclosed the limitation *wherein the front end module recognizes a delimiting character that distinguishes interface definition language tokens from programming language tokens* (Grimes: page 4-5, code block demonstrates "module" preceded by "[", a delimiting character).

In regard to claim 8, Grimes and Aho further disclosed the limitation *further comprising an error checker module that performs lexical and syntactic checks on the file* (Aho: page 11).

In regard to claim 9, Grimes disclosed the limitations:

- *A computer readable medium having stored thereon a data structure representing a unified interface definition language ... for a file having a combination of programming language code and embedded interface definition language information* (page 2-5; notice Figure and code block)

Grimes did not explicitly state limitations concerning *programming language parse tree and symbol table*. Aho demonstrated that it was known at the time of invention to utilize parse trees and symbol tables (pages 11 and 40-48). It would have been obvious to one of ordinary skill in the art at the time of invention to implement Grime's interface definition language / programming language compiler with symbol tables and parse trees as appropriate for compiling such a combination as found in Aho's teaching. This implementation would have been obvious because one of ordinary skill in the art would be motivated to use common and well understood techniques for implementing compilers. Additionally the limitations below were discussed in previous claims:

- *a first data field storing data representing a symbol table that has plural entries, each of the plural entries corresponding to a symbol name for programming language code of a file having a combination of programming language code and embedded interface definition language information, at least one of the plural entries having an associated list of interface definition language attributes based upon the embedded interface definition language information* (page 11); *and*

- *a second data field storing data representing a parse tree, wherein the parse tree unifies representation of the programming language code and the embedded interface definition language information* (page 40-48).

In regard to claim 10, Grimes disclosed the limitations:

- *In a computer system, a method of creating a binary file from an input file that includes a mix of programming language constructs and definition language constructs* (page2, section "How is Attribute Programming Managed in Visual C++"; page 4-5, code block), *the method comprising:*
  - *providing one or more input files, each input file comprising a mix of programming language constructs and definition language constructs* (page 4-5, code block);
  - *upon user initiation at compile time, creating a binary file from the one or more input files, wherein the creation of the binary file comprises* (page 3, second paragraph under figure):
    - *with a compiler, converting the one or more input files into one or more output code files that include fragments of definition language information* (page 3, second paragraph under figure) *wherein the one o more output code files further include output computer-executable code based at least in part upon semantics of the definition language constructs* (page 3, second paragraph under figure)

Grimes did not explicitly teach *with a linker, generating a binary file from the one or more output code files.* Aho demonstrated that it was known at the time of invention to utilize linkage editors and loaders (page 19; section "Loaders and Link-Editors"). It would have been obvious to one of ordinary skill in the art at the time of invention to implement Grimes' system of compilation with a linkage editor as found in Aho's teaching. This implementation would have been obvious because one of ordinary skill in the art would be motivated to provide functionality, which is commonly used to execute code/programs and provide a final executable version of a program/code.

In regard to claim 11, Grimes and Aho further disclosed the limitations wherein the generating comprises:

- *extracting the fragments of definition language information from the one or more output code files* (obvious from Aho and especially considering Grimes: page 3, third paragraph under the figure);
- *passing the extracted fragments to the compiler* (obvious from Aho and especially considering Grimes: page 3, third paragraph under the figure);
- *generating by the compiler an intermediate definition language file* (obvious from Aho and especially considering Grimes: page 3, third paragraph under the figure);
- *based upon the intermediate definition language file, generating by a definition language compiler a type library file* (obvious from Aho and especially considering Grimes: page 3, third paragraph under the figure); *and*

- *producing the binary file based upon the one or more output code files and the type library file* (obvious from Aho and especially considering Grimes: page 3, third paragraph under the figure).

In regard to claim 12, Grimes and Aho further disclosed the limitations wherein the producing comprises:

- *embedding the type library file into a first intermediate resource file* (obvious from Aho and especially considering Grimes: page 3, third paragraph under the figure);
- *with a resource tool, generating a second intermediate resource file* (obvious from Aho and especially considering Grimes: page 3, third paragraph under the figure);
- *with a resource file combiner, combining the second intermediate resource file with one or more related resource files into a combined resource file* (obvious from Aho and especially considering Grimes: page 3, third paragraph under the figure); *and*
- *producing the binary file based upon the one or more output code files and the combined resource file* (obvious from Aho and especially considering Grimes: page 3, third paragraph under the figure).

In regard to claim 13, Grimes disclosed the limitations:

- *In a computer system, a method of deriving semantic meaning from definition language information embedded in programming language code in a file* (pages 2-3, section "How is Attribute Programming Managed in Visual C++", including the figure; pages 4-5, block of code), *the method comprising:*
  - *a file including definition language information embedded in programming language code* (pages 4-5, block of code)
  - *representation based at least in part upon semantics of the embedded definition language information* (page 3, figure)

Grimes did not explicitly teach *separating a file into plural tokens; converting the plural tokens into an intermediate representation; and generating output code from the intermediate representation.* Aho demonstrated that it was known at the time of invention to provide compilers, which utilize separating files into tokens, converting tokens to an intermediate representation, and generating output code from an intermediate representation (pages 4-15; page 4 mentions tokens, page 12 mentions the intermediate representation). It would have been obvious to one of ordinary skill in the art at the time of invention to implement Grimes' programming language code embedded with definition language information compiler with the techniques found in Aho's teaching. This implementation would have been obvious because one of ordinary skill in the art would be motivated to develop a compiler based upon the well understood compiler theories and constructions taught by Aho for the purpose of building compilers.

In regard to claim 14, Grimes and Aho further disclosed the limitations wherein the converting comprises:

- *building a symbol table having plural entries for symbol names for the programming language code, at least one of the plural entries having an associated list of definition language attributes based upon the embedded definition language information* (Aho: page 11); *and*
- *building a parse tree that unifies representation of the programming language code and the embedded definition language information* (Aho: page 40-48, section 2.4)

In regard to claim 15, Grimes and Aho further disclosed the limitation *further comprising modifying the intermediate representation by a definition language attribute provider based upon the semantics of the embedded definition language information* (Grimes: page 3, figure shows attribute provider; page 2-3, paragraph spanning the pages describes the operations of attribute providers).

In regard to claim 16, Grimes disclosed the limitations:

- *A computer readable medium having stored thereon instructions for performing a method of creating a unified programming language* (page 3, figure; page 4-5, code block) ... *a file that includes definition language information embedded in programming language code* (page 4-5, code block), *the method comprising:*

- *a file including definition language information embedded in programming language code* (page 4-5, code block)

Grimes did not explicitly state *definition language parse tree; separating a file into plural tokens; building a symbol table having plural entries for symbol names for the programming language code, at least one of the plural entries having an associated list of definition language attributes based upon the embedded definition language information; and building a parse tree that unifies representation of the embedded definition language information and the programming language code*. Aho demonstrated that it was known at the time of invention to utilize compilers with various features, including: parse trees, breaking files into a plurality of tokens, building symbol tables (pages 10-11, 20, and 40-48). It would have been obvious to one of ordinary skill in the art at the time of invention to implement Grimes' definition language information and unified programming language compiler system with the tools necessary for compiler's to function as found in Aho's teaching. This implementation would have been obvious because one of ordinary skill in the art would be motivated to allow the compiler of Grimes to function as is commonly known for compilers. Upon see the obviousness of the two references in combination, one of ordinary skill in the art would also clearly see the limitations *symbol table having plural entries for symbol names for the programming language code, at least one of the plural entries having an associated list of definition language attributes based upon the embedded definition language information* (symbol table of Grimes would include both programming language and definition language in order for the compiler to correctly track identifiers that may occur)

and *parse tree that unifies representation of the embedded definition language information and the programming language code* (parse tree in Grimes in order to correctly processing the tokens of a system that has programming language and definition language constructs).

In regard to claim 17, Grimes and Aho further disclosed the limitation *wherein the separating comprises recognizing a delimiting character that distinguishes definition language tokens from programming language tokens* (Grimes: page 4-5, code block; note "[" near the word "module").

In regard to claim 18, Grimes disclosed the limitations:

- *A computer readable medium having stored thereon a computer executable compiler system that checks for errors in a file comprising a mix of definition language information and programming language code* (page 2-5; figure and code block), *the compiler system comprising:*

Grimes did not explicitly state the limitations *a front end module that separates a file into plural tokens* and checking for errors*; a converter module that converts the plural tokens into an intermediate representation* and checking for errors (typically part of the front end)*; and a back end module that produces output code from the intermediate is representation*. Aho demonstrated that it was known at the time of invention to develop compilers with a front end, a converter module and a back end (page 20, section "Front and Back Ends" and additional details of functions performed by those elements of a

compiler are found throughout chapter 1, pages 1-24). It would have been obvious to one of ordinary skill in the art at the time of invention to implement Grimes' system of C++ code and definition code with a compiler, which would generate executable code as found in Aho's teaching. This implementation would have been obvious because one of ordinary skill in the art would be motivated to provide a mechanism, which would allow source code to produce meaningful executable code.

In regard to claim 19, Grimes and Aho did not explicitly state *wherein the converter module further checks for semantic errors between the definition language information and the programming language code*. Aho demonstrated that it was known at the time of invention to check for errors at various phases (page 11, section "Error Detection and Reporting"). Grimes demonstrated it was known to implement compilers with both definition language information and programming language information. It would have been obvious to one of ordinary skill in the art at the time of invention to implement the Grimes Aho compiler system with error checking between the definition language information and the programming code as suggested by their own teaching. The converter modules would check for errors just like all other phases/modules/sections. Furthermore, semantic errors are related to the converter module as it is related to language representation to begin with. This implementation would have been obvious because one of ordinary skill in the art would be motivated to use known compiler techniques and reduce errors.

In regard to claim 20, Grimes disclosed the limitations:

- *In a computer system having a programming language compiler that generates output code based upon programming language source code* (page 2-3, section "How is Attribute Programming Managed in Visual C++"), *the programming language compiler including a compiler state* (page 3, Figure shown), *an improvement comprising:*
  - *modifying the programming language compiler to recognize constructs of interface definition language information embedded within programming language source code* (pages 4-5, block of code showing definition language embedded);
  - *modifying the programming language compiler to expose the compiler state to one or more interface definition language attribute providers* (page 3, figure shown);
  - modifying the programming language compiler to allow manipulation of the elements of the compiler by the one or more interface definition language attribute providers based upon the semantics of the embedded interface definition language information (page 3, figure shown; pages 2-3, paragraph spanning the pages)

Grimes did not explicitly state the limitations of a symbol table and a parse tree. Aho demonstrated that it was known at the time of invention to develop compilers with a symbol table and a parse tree (page 10, 11, 40-48). It would have been obvious to one of ordinary skill in the art at the time of invention to implement Grimes' system of

embedded definition code within a programming language with a compiler, which would generate executable code as found in Aho's teaching. This implementation would have been obvious because one of ordinary skill in the art would be motivated by the commonly understood techniques of allowing source code to produce meaningful executable code.

Claim 22

Grimes and **Aho** disclosed the compiler system of claim 1 wherein the backend module also produces output definition language information in an output file that includes the output computer-executable code (**Grimes**: page 2, third paragraph under "How is Attribute Programming Managed in Visual C++?"; the sentence, "This indicates that IDL should be generated from the attributes and placed into the compiled .obj file.").

Claim 23

Grimes and **Aho** disclosed the compiler system of claim 1 wherein the backend module also produces output definition language information in a separate output file from the output computer-executable code (**Grimes**: page 2, third paragraph under "How is Attribute Programming Managed in Visual C++?"; the sentence, "The preview comes with a tool called Idlgen that appears to do the dual step of generating an IDL file from the .obj file and then...").

Claim 24

Grimes and **Aho** disclosed the compiler system of claim 1 wherein the output computer-executable code is computer-executable for a real processor (**Aho**: page 1, last paragraph to page 2, top paragraph).

Claim 25

Grimes and **Aho** did not explicitly state the compiler system of claim 1 wherein the output computer-executable code is computer-executable instructions for a virtual processor. Official Notice is taken that it was known at the time of invention to provide compilers for virtual processors. It would have been obvious to one of ordinary skill in the art at the time of invention to implement the compiler of **Grimes** and **Aho** with compiling for a virtual machine/processor. This implementation would have been obvious because one of ordinary skill in the art would be motivated to provide compiling technology to as many possible compiler implementations and thus improve product usability and flexibility.

Claim 26

Grimes and **Aho** disclosed the compiler system of claim 1 wherein the programming language code is in C++ and wherein the embedded definition language information includes IDL constructs (**Grimes**: page 2, second and third paragraphs under "How is Attribute Programming Managed in Visual C++?")

Claims 27-36

The limitations of claims 27-36 correspond to claims 22-26 and are therefore rejected in the same manner.

~II~

An additional rejection, in accordance with the broadest reasonable interpretation of the claim language.

5 Claims 1, 4-10, 13-20, 22, 24-25, 27-30 and 32-35 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Aho** et al., "Compilers Principles, Techniques, and Tools" in view of **Williams** et al. (USPN 5,467,472).

Claim 1

Aho disclosed a computer readable medium having stored thereon a computer executable compiler system that performs semantic analysis, the compiler system comprising:

a front end module that separates a file into plural tokens, the file including programming language code *(page 20, section "Front and Back Ends")*;

a converter module that converts the plural tokens into an intermediate representation, wherein the intermediate representation includes a symbol table and a tree that unifies representation of the programming language code, wherein the symbol table includes plural entries for symbol names for the programming language code, and wherein at least one of the plural entries has an associated list of attributes *(page 20, section "Front and Back Ends"; pages 11 and 40-48)*;

a back end module that produces output computer-executable code from the intermediate representation *(page 20, section "Front and Back Ends")*.

Aho did not *explicitly* state *embedded definition language information in a file*. **Williams** demonstrated that it was known at the time of invention to provide code embedded with definition language information (column 2, lines 52-60). It would have been obvious to one of ordinary skill in the art at the time of invention to implement the compiler of **Aho** with C++ class interface definitions as found in **Williams**' teaching. This implementation would have been obvious because one of ordinary skill in the art would be motivated to compile code for a variety of programming languages and architectures (**Aho**: page 1).

Claim 4

Aho and **Williams** disclosed the compiler system of claim 1 further comprising a definition language attribute provider that modifies the intermediate representation based upon the semantics of the embedded definition language information (**Aho**: page 11, 20 and 40-48).

Claim 5

Aho and **Williams** disclosed the compiler system of claim 1 further disclosed the limitation *further comprising an error checker module that checks for lexical, syntactic, and semantic errors in the file* (**Aho**: page 6-10, note figure 1.9).

Claim 6

The limitations are substantially similar to those of claim 1 and as such are rejected in the same manner.

Claim 7

Aho and **Williams** disclosed the compiler system of claim 6 wherein the front end module recognizes a delimiting character that distinguishes interface definition language tokens from programming language tokens (**Aho**: page 20; **Williams**: column 2, lines 52-60, abstract class constructs taken together).

Claim 8

The limitations are substantially similar to those of claim 5 and as such are rejected in the same manner.

Claim 9

The limitations are substantially similar to those of claim 1 and as such are rejected in the same manner.

Claim 10

The limitations are substantially similar to those of claim 1 and as such are rejected in the same manner. Aho further demonstrated that it was known at the time of invention to utilize linkage editors and loaders (page 19; section "Loaders and Link-Editors").

Claim 13

The limitations are substantially similar to those of claim 1 and as such are rejected in the same manner.

Claim 14

The limitations are substantially similar to those of claim 1 and as such are rejected in the same manner.

Claim 15

The limitations are substantially similar to those of claim 4 and as such are rejected in the same manner.

Claim 16

The limitations are substantially similar to those of claim 1 and as such are rejected in the same manner.

Claim 17

The limitations are substantially similar to those of claim 7 and as such are rejected in the same manner.

Claim 18

The limitations are substantially similar to those of claims 1 and 5 and as such are rejected in the same manner.

Claim 19

The limitations are substantially similar to those of claims 4 and 5 and as such are rejected in the same manner.

Claim 20

The limitations are substantially similar to those of claim 1 and as such are rejected in the same manner.

Claim 22

Aho and **Williams** disclosed the compiler system of claim 1 wherein the backend module also produces output definition language information in an output file that includes the output computer-executable code *(inherently included in compiler output)*.

Claim 24

Aho and **Williams** disclosed the compiler system of claim 1 wherein the output computer-executable code is computer-executable for a real processor (**Aho**: page 1, last paragraph to page 2, top paragraph).

Claim 25

Aho and **Williams** did not explicitly state the compiler system of claim 1 wherein the output computer-executable code is computer-executable instructions for a virtual processor. Official Notice is taken that it was known at the time of invention to provide compilers for virtual processors. It would have been obvious to one of ordinary skill in the art at the time of invention to implement the compiler of **Aho** and **Williams** with compiling for a virtual machine/processor. This implementation would have been obvious because one of ordinary skill in the art would be motivated to provide compiling technology to as many possible compiler implementations and thus improve product usability and flexibility.

Claims 27-30 and 32-35

The limitations of claims 27-30 and 32-35 correspond to claims 22-25 and are therefore rejected in the same manner.

Response to Arguments

6. Applicant's arguments filed 29 June 2005 have been fully considered but they are not persuasive. Further consideration and response to the arguments would require a proper response to the Requirement for Information of the last Office Action dated 26 January 2005. As such, the rejections are maintained. With regard to Applicant's arguments over the Williams reference, the claim language states "definition language information". This term is not limited in anyway by Applicant's specification and is

broad. The rejections are made accordingly. Finally, as a courtesy to Applicant, a copy of the previously mailed Requirement for Information is included herewith (as five months passed without any indication from Applicant of a need for possibly missing information). Applicant ***must*** respond to the Requirement for Information and are encouraged to telephone the Office in order to expedite the prosecution, should they be unable to find the Requirement for Information.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Correspondence Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to William H. Wood whose telephone number is (571)-272-3736. The examiner can normally be reached 9:00am - 5:30pm Monday thru Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kakali Chaki can be reached on (571)-272-3719. The fax phone numbers for the organization where this application or proceeding is assigned are (571)273-8300 for regular communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)305-3900.

William H. Wood
October 17, 2005

KAKALI CHAKI
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100

REQUEST FOR INFORMATION

37 CFR 1.105

§ 1.105 Requirements for information.

(a)

(1) In the course of examining or treating a matter in a pending or abandoned application filed under 35 U.S.C. 111 or 371 (including a reissue application), in a patent, or in a reexamination proceeding, the examiner or other Office employee may require the submission, from individuals identified under § 1.56(c), or any assignee, of such information as may be reasonably necessary to properly examine or treat the matter, for example:

(i) Commercial databases : The existence of any particularly relevant commercial database known to any of the inventors that could be searched for a particular aspect of the invention.

(ii) Search : Whether a search of the prior art was made, and if so, what

was searched.
(iii) Related information : A copy of any non-patent literature, published application, or patent (U.S. or foreign), by any of the inventors, that relates to the claimed invention.
(iv) Information used to draft application : A copy of any non-patent literature, published application, or patent (U.S. or foreign) that was used to draft the application.
(v) Information used in invention process : A copy of any non-patent literature, published application, or patent (U.S. or foreign) that was used in the invention process, such as by designing around or providing a solution to accomplish an invention result.
(vi) Improvements : Where the claimed invention is an improvement, identification of what is being improved.
(vii) In Use : Identification of any use of the claimed invention known to
any of the inventors at the time the application was filed notwithstanding the date of the use.
(2) Where an assignee has asserted its right to prosecute pursuant to § 3.71(a)
of this chapter, matters such as paragraphs (a)(1)(i), (iii), and (vii) of this section may also be applied to such assignee.
(3) Any reply that states that the information required to be submitted is unknown and/or is not readily available to the party or parties from which it was requested will be accepted as a complete reply.
(b) The requirement for information of paragraph (a)(1) of this section may be included in an Office action, or sent separately.
(c) A reply, or a failure to reply, to a requirement for information under this section will be governed by §§ 1.135 and 1.136.
[Removed and reserved, 62 FR 53131, Oct. 10, 1997, effective Dec.1, 1997; added, 65 FR 54604, Sept. 8, 2000, effective Nov. 7, 2000]

Requirement for Information

Applicant and the assignee of this application are required under 37 CFR 1.105 to provide the following information that the examiner has determined is reasonably necessary to the examination of this application. Upon review of the disclosed prior art Richard **Grimes**, "Attribute Programming with Visual C++", Wrox Press, 11 pp., [online] [retrieved 24 April 2000, www.comdeveloper.com/articles/attribprog.asp], it is determined that additional information was made available to the public as far back as 1998 regarding subject matter related to the current claimed invention (note, **Grimes**: page 1, second paragraph disclosed files and compiler made available to public at the

Denver PDC in 1998). The specifics of the public disclosure must be analyzed in a determination of applicability under 35 U.S.C. § 102(a,b).

In response to this requirement, please provide:

1) Agenda of Microsoft Professional Developer's Conference held in Denver in 1998;

2) Copy of Denver PDC conference DVD file called "Visual C++ Technical Preview";

3) Transcript of conference talk, "Language Innovations for COM+ and Beyond";

4) Factual statement explaining the released compiler's conference release-time capabilities; and

5) Factual statement explaining technical and theoretical capabilities of the released compiler as they were made known to the public.

Additionally in response to this requirement, please provide the names of any products or services that have incorporated the claimed subject matter and/or the names of any products or services that have incorporated the disclosed prior art Richard **Grimes**, "Attribute Programming with Visual C++". In addition to provided names, please provide dates said products and services were made available to the public.

In responding to those requirements that require copies of documents, where the document is a bound text or a single article over 50 pages, the requirement may be met by providing copies of those pages that provide the particular subject matter indicated in

the requirement, or where such subject matter is not indicated, the subject matter found in applicant's disclosure.

The fee and certification requirements of 37 CFR 1.97 are waived for those documents submitted in reply to this requirement. This waiver extends only to those documents within the scope of this requirement under 37 CFR 1.105 that are included in the applicant's first complete communication responding to this requirement. Any supplemental replies subsequent to the first communication responding to this requirement and any information disclosures beyond the scope of this requirement under 37 CFR 1.105 are subject to the fee and certification requirements of 37 CFR 1.97.

The applicant is reminded that the reply to this requirement must be made with candor and good faith under 37 CFR 1.56. Where the applicant does not have or cannot readily obtain an item of required information, a statement that the item is unknown or cannot be readily obtained will be accepted as a complete reply to the requirement for that item.

Conclusion

This requirement is an attachment of the enclosed Office action. A complete reply to the enclosed Office action must include a complete reply to this requirement. The time period for reply to this requirement coincides with the time period for reply to the enclosed Office action.

Correspondence Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to William H. Wood whose telephone number is (571)-272-3736. The examiner can normally be reached 9:00am - 5:30pm Monday thru Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kakali Chaki can be reached on (571)-272-3719. The fax phone numbers for the organization where this application or proceeding is assigned are (571)273-8300 for regular communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)305-3900.

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October 17, 2005

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